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EXAMINER				
VU, HOANG-CHUONG Q				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/529,737

Applicant(s)

MARKERT ET AL.

Examiner

HOANG-CHUONG Q. VU

Art Unit

2476

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/CD)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of Claims: Claims 1-13 are currently pending.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/08/2010 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1 and 10, the phrase "so that" (line 6 of claim 1) (line 8 of claim 10) and "so that" (line 13 of claim 1) (line 17 of claim 10) render the claims indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05. Dependent claims are rejected because they depend on the rejected based claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. **Claims 1, 3-7, 9-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Pekarske (5,146,452) in view of Annunziata et al. (4,701,630).

Regarding claim 1, Pekarske discloses a communication system comprising first and second control and/or drive networks (11, 12) having network nodes (1, 2, 3, 4, 5) (see Fig. 6, first network includes nodes 122, 126; second network includes 120 and 124), wherein each of said first and second control and/or drive networks (11, 12) has one master control unit connected to said network nodes (Fig. 6; master node 122, and master node 124), wherein said master control units are connected to a database such that external commands for configuring the networks are delivered (col. 3 lines 17-18; any node (including master) having switching capability along with data storage to operate) (Fig. 1 shows a switching node with database and

administrative controller) (col. 7 lines 24-31; command is added to switch interrupted traffic to new path, thus affecting the network topology similar to Fig. 6 which is shown with a fiber cut), wherein for operating industrial machines, control and/or regulating signals exchanged between the network nodes via a closed ring-like signal line (6, 7) (see Fig. 5; signals are exchanged between network nodes 122, 124, 126, 128 via a closed ring-link line), wherein a first one of the network nodes exchanges signals with at least one further network node (1, 3) over a bidirectional signal path (10) (see Fig. 5; network node 128 may exchange signals with network nodes 124 and 126 over a bidirectional signal path 120), wherein at least one of said network nodes has a switchover unit (8), wherein the switchover unit (8) is configured to communicate with two further network nodes (1, 3) via two bidirectional signal paths (10) (see Fig. 1 shows a single node includes switch 64 which comprises send and receive ports connected therein; Fig. 5 shows the communication between nodes via bidirectional path 120), wherein said switchover unit is configured to be implemented via master/slave control units so that a switch position of said switch over unit is alterable (see col. 5 lines 5-23; nodes (126, 128) may be altered to provide capabilities of master for terminating the loop, interrupted communication flow is reconnected via alternative paths (position of the switch is changed based on the fiber cut)), wherein the switchover unit (8) in a first switching position connects the two signal paths (10) through the network node (2) (see Fig. 5; switch 64 in node 128 connects the two signal paths thru network node 128), wherein the switching unit (8) in a second switching position interrupts the communication between the two signal

paths and connects two signal courses (9) of at least one bidirectional signal path (10) to one another (**see Fig. 6; the two signal paths are interrupted and the switch in node 128 can connect two signal courses of at least one bidirectional signal path 120 to one another**), wherein the communication system is configured into different networks (11, 12) via at least one predetermined connection of the switchover unit (8) of at least one of the network nodes (1, 2, 3, 4, 5) to a switchover unit (8) of the at least one further of the network nodes (1, 2, 3, 4, 5), and the networks (11, 12) have separate signal lines (6, 7) from one another (**see Fig. 6; the communication system can be configured into first network having network nodes 122, 126 and second network having network nodes 128, 124; each network has separate signal lines (120 for first network, 130 for second network); Fig 1 shows each node in the communication system includes switch 64 (send and receive ports) to connect between nodes; thus the switch in node 122 connects to the switch of the further nodes 126 to create a first network and the switch in node 128 connects to the switch of the further network node 124 to create a second network when there is a fiber cut shown in Fig. 6**). However, Pekarske may not explicitly teach two signal paths are connected via conduction of signals. Annunziata et al. from the same field of endeavor teach a communication network for connecting terminal equipments such as printers in a ring like or closed loop (**see col. 1 lines 41-47**) having conduction path between the equipments (**see col. 1 lines 24-26, 48 or col. 2 lines 9-11**). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the teaching known to Annunziata et al. in the system of Pekarske to

connect bidirectional paths 120 in the manner of conduction. One of ordinary skill in the art would have motivated to do so to since conduction of signals between conducting members can easily be separated to enable interruption of communication path in the teaching of Pekarske.

Regarding claim 3, Pekarske further teaches the communication system as recited in claim 1, wherein a network node (1, 2, 3, 4, 5) is connected to a control unit (23) **(Fig. 1 shows a single node connected to a control unit 12)**.

Regarding claim 4, Pekarske further teach the communication system as recited in claim 1, wherein each network (11, 12) has one control unit with a master function and at least one control unit with a slave function **(see col. 13-21 and Fig. 6; network node 126 in first network and network 128 in second network with a temporary master function to communicate with remaining nodes (slave function) on the loops)**.

Regarding claim 5, Pekarske further teaches the communication system as recited in claim 1, wherein the switchover unit (8) is switchable via a software controller **(see Fig. 1 and col. 3 lines 20-58; the switch 64 and other switches in a node is controlled via controller unit 12 with software algorithms (col. 2 lines 67-68))**.

Regarding claim 6, Pekarske further teaches the communication system as recited in claim 1, wherein one network (11, 12) is configured in accordance with a leading axis and the dependent following axes of a controller of a machine system and wherein control units which execute control tasks as a function of the leading axis and control units that execute control tasks as a function of following axes of the leading axis

are combined into one network (11, 12) **(see Fig. 6 and col. 5 lines 5-23; due to a cut in the ring, first network is configured with a temporary master 126 (leading axis) and remaining nodes 122 (following axes) to implement plan where the interrupted communication channels are reconnected. The master and remaining nodes are combined into one network (first network comprising nodes 122, 126 communicate via path 130 and second network comprising nodes 128, 124 communicate via path 120))**.

Regarding claim 7, Annunziata et al. further teach the communication system as recited in claim 6, wherein the machine system is a printing machine (18) with a plurality of printing units (21) **(see Abstract and col. 1 lines 41-47; configuration of a communication network within offices such as a network of interconnecting printers)**. Thus, it would have been obvious to one of ordinary skill in the art to utilize machine system comprising the network of connecting printers as taught by Annunziata et al. One of ordinary skill would have motivated to do so to implement the network of printer units in an office as a closed ring like network as taught by Pekarske. The motivation for doing so is to easily manage the network and perform wraparound when a failed machine is detected.

Regarding claim 9, Pekarske further teaches the communication system as recited in claim 7, wherein control units (1, 2, 3) of a plurality of nodes (18, 20) are connected to one network (11, 12) and are supplied by the network with control signals **(Fig. 1 shows a control unit 12 in a single node. Fig. 6 shows nodes (with control units 12) connected to one network and are supplied by the network with control**

signals (col. 4 lines 28-31)), wherein a control unit performs a master function for further control units, wherein said further control units which perform slave functions (Fig. 6; temporary master with control unit 12 (Fig. 1) performs as a master when there is link failure and other nodes receive signal from the temporary master to implement such plan).

Regarding claim 10, Pekarske discloses a method comprising the following steps: providing a communication system, said communication system comprising first and second control and/or drive networks (11, 12) having network nodes (1, 2, 3, 4, 5) (see Fig. 6, first network includes nodes 122, 126; second network includes 120 and 124), wherein each of said first and second control and/or drive networks (11, 12) has one master control unit connected to said network nodes (Fig. 6; master node 122, and master node 124), wherein said master control units are connected to a database such that external commands for configuring the networks are delivered (col. 3 lines 17-18; any node (including master) having switching capability along with data storage to operate) (Fig. 1 shows a switching node with database and administrative controller) (col. 7 lines 24-31; command is added to switch interrupted traffic to new path, thus affecting the network topology similar to Fig. 6 which is shown with a fiber cut), exchanging control and/or regulating signals between the network nodes via a closed ring-like signal line (6, 7) for operating industrial machines (see Fig. 5; signals are exchanged between network nodes 122, 124, 126, 128 via a closed ring-link line), wherein a first one of the network nodes exchanges signals with at least one further network node (1, 3) over a bidirectional

signal path (10) **(see Fig. 5; network node 128 may exchange signals with network nodes 124 and 126 over a bidirectional signal path 120)**, wherein at least one of said network nodes has a switchover unit (8), wherein the switchover unit (8) is configured to communicate with two further network nodes (1, 3) via two bidirectional signal paths (10) **(see Fig. 1 shows a single node includes switch 64 which comprises send and receive ports connected therein; Fig. 5 shows the communication between nodes via bidirectional path 120)**, wherein said switchover unit is configured to be implemented via master/slave control units so that a switch position of said switch over unit is alterable **(see col. 5 lines 5-23; nodes (126, 128) may be altered to provide capabilities of master for terminating the loop, interrupted communication flow is reconnected via alternative paths (position of the switch is changed based on the fiber cut))**; connecting via the switchover unit (8) in a first switching position the two signal paths (10) through the network node (2) **(see Fig. 5; switch 64 in node 128 connects the two signal paths thru network node 128)**; interrupting by the switching unit (8) in a second switching position the communication between the two signal paths and connects two signal courses (9) of at least one bidirectional signal path (10) to one another **(see Fig. 6; the two signal paths are interrupted and the switch in node 128 can connect two signal courses of at least one bidirectional signal path 120 to one another)**, wherein the communication system is configured into different network via a suitable connection of the switchover units (8) of the network nodes (1, 2, 3, 4, 5), and wherein the networks (11, 12) have separate signal lines (6, 7) from one another **(see Fig. 6; the communication system can be configured into first network**

having network nodes 122, 126 and second network having network nodes 128, 124; each network has separate signal lines (120 for first network, 130 for second network); Fig 1 shows each node in the communication system includes switch 64 (send and receive ports) to connect between nodes; thus the switch in node 122 connects to the switch of the further nodes 126 to create a first network and the switch in node 128 connects to the switch of the further network node 124 to create a second network when there is a fiber cut shown in Fig. 6), and performing a change in the configuration of the networks (11, 12) by means of software commands (see col. 5 lines 34-64; algorithm is executed to generate commands to switch to new paths. Fig. 6 shows a change in the configuration when the link fails (fiber is cut)). However, Pekarske may not explicitly teach two signal paths are connected via conduction of signals. Annunziata et al. from the same field of endeavor teach a communication network for connecting terminal equipments such as printers in a ring like or closed loop (see col. 1 lines 41-47) having conduction path between the equipments (see col. 1 lines 24-26, 48 or col. 2 lines 9-11). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the teaching known to Annunziata et al. in the system of Pekarske to connect bidirectional paths 120 in the manner of conduction. One of ordinary skill in the art would have motivated to do so to since conduction of signals between conducting members can easily be separated to enable interruption of communication path in the teaching of Pekarske.

Regarding claim 11, Pekarske further teaches the method as recited in claim 10, wherein if a malfunction occurs upon data exchange, a change in the configuration of the network is performed in order to exclude defective signal communication and/or a defective network node or a control unit from one network (11, 12) **(see col. 5 lines 5-64; if there's a cut in the ring, the temporary masters send signal to remaining nodes to indicate the failure span and to implement the recovery or reconnect via alternate paths; when a failed event occurs, the failed segment is terminated (excluded))**.

Regarding claim 12, Pekarske further teaches the method as recited in claim 11, wherein the configuration of the network is performed as a function of a configuration of a plurality of nodes (see Fig. 5; network is reconfigured when there is a cut in the ring (fiber cut)), However, Pekarske fails to explicitly teach configuration of a plurality of machines in a processing group in the form of a printing machine (18). Annunziata et al. from the same or similar field of endeavor teach configuration of a plurality of machines in a processing group, in particular a printing machine (18) **(see Abstract and col. 1 lines 41-47; configuration of a communication network within offices such as a network of interconnecting printers)**. Thus, it would have been obvious to one of ordinary skill in the art to utilize the network of connecting printers in the teaching of Pekarske. One of ordinary skill would have motivated to do so to reconfigure printers' network when there is a failed machine occurs in the closed ring like network as taught by Pekarske. The motivation for doing so is to manage the network and perform wraparound when a failed machine is detected.

Regarding claim 13, Pekarske further teaches the method as recited in claim 12, wherein if a malfunction occurs in a machine of the processing group, the network node which supplies the defective machine with control signals is excluded from the network (11, 12) **(see col. 5 lines 34-63; the apparatus detects network event such as a failed segment is identified. A new path is established for the traffic).**

7. **Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over Pekarske (5,146,452) in view of Annunziata et al. (4,701,630), and further in view of Jackson et al. (7,330,661).

Regarding claim 2, Pekarske further teaches the communication system as recited in claim 1, wherein two network nodes (3, 4) of two networks (11, 12) are each connected to one another via two lines (9) between the two network nodes (3, 4) **(see Fig. 5 network nodes 126, 128 are connected to one another via two lines 120).** However, Pekarske may not explicitly teach each mechanically connected to one another. Jackson et al. from the same or similar field of endeavor teach computer networks includes two or more devices that are mechanically connected **(see col. 1 lines 13-14)**. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the teaching of Jackson to connect network nodes 126, 128 of Pekarske mechanically. One of ordinary skill in the art would have motivated to so provide a way to connect devices that are in a relatively close geographical proximity (see Jackson col. 1 lines 19-21).

8. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Pekarske (5,146,452) in view of Annunziata et al. (4,701,630), and further in view of Monse et al. (7,013,328).

Regarding claim 8, Pekarske further teaches the communication system as recited in claim 7, wherein a control unit (1) is connected to a further ring line (14) (control unit 12 in a single node (Fig. 1) where each node connects to a ring line 120 (Fig. 5)); However, Pekarske fails to explicitly teach that the further ring line (14) is connected to drive mechanisms (13) of a printing unit (21); and that the control unit (1) controls the drive mechanisms (13) chronologically synchronously. Monse et al. from the same or similar field of endeavor teach that the further ring line (14) is connected to drive mechanisms (13) of a printing unit (21); and wherein a control unit (1) controls the drive mechanisms (13) chronologically synchronously **(see Abstract; drive units in network nodes (printing machines) are connected to a ring structure; drive units are controlled in an electrical drive system chronologically (master/slave principle in a ring) synchronously)**. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the teaching of Monse et al. in the system taught by Pekarske and Annunziata et al. to provide drive units in printing machines to be controlled in a ring like structure. One of ordinary skill in the art at the time would have motivated to do so to increase reliability and flexibility in the drive system of a printing machines network since an individual machine part or machine system can be controlled and switched off without effecting the rest of the machine (see Monse et al. col. 2 lines 24-35).

Response to Amendment

Applicant has amended claim 10 in regards to the rejection under 35 U.S.C. 112, second paragraph; thus the rejection has been withdrawn.

Response to Arguments/Remarks

9. Applicant's arguments filed 02/08/2010 have been fully considered but they are not persuasive.

10. On page 8 of the Applicant's remarks regarding claims 1 and 10, Applicant submits that neither of the cited references deal with a communication system comprising a control and/or drive network. The Examiner respectfully disagrees since Pekarske teaching is directed to the operation of a control signal network between the various nodes (col. 2 lines 40-43 or col. 3 lines 10-11). In addition, Applicant also submits that it has not been shown or established in the Final Action where such a network is disclosed and the data mentioned is not applicable for operating industrial machines and there are no control/regulation signals exchanged between nodes. The Examiner respectfully disagrees because Pekarske has been cited to show in the previous action for disclosing such network (Fig. 5 which discloses a control signal network). Pekarske also discloses that the control signals are exchanged between network nodes (col. 22 lines 29-31, 36-39). In response to Applicant's remarks that data mention is not for operating industrial machines, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the

claim. In this case, the structure of the network and method disclosed by Pekarske satisfied the claimed limitations. Applicant also submits that the mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In response to applicant's submissions, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOANG-CHUONG Q. VU whose telephone number is (571) 270-3945. The examiner can normally be reached on Monday through Thursday 8:30 AM to 6:00 PM EST. and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, AYAZ R. SHEIKH can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. V./ 05/08/2010
Examiner, Art Unit 2476

/Ayaz R. Sheikh/
Supervisory Patent Examiner, Art
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